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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

COSTALES, SHRUTI S

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/522,419

Applicant(s)

TORT ET AL.

Examiner

Shruti S. Costales

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/26/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement submitted on January 26, 2005 was filed in compliance with the provisions of 37 CFR § 1.97. Accordingly, the information disclosure statement filed by the applicant has been considered by the Examiner.

Specification

2. The abstract of the disclosure is objected to because the applicant does not set forth specifically that which is new in the art to which the invention pertains. Further, the abstract was amended via a preliminary amendment filed on January 26, 2005, wherein fuel has been misspelled as "fule" at line 4 of the abstract. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

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Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

3. Claims 31 and 37 are objected to because of the following informalities:

(i) Claim 31 recites "C_{19i}", wherein "C_{19i}" appears to be a typographical error and should probably be corrected to "C₁₉".

(ii) Claim 37 recites "the said fraction", wherein "the" and "said" provide the same function of antecedent basis to "fraction", therefore the use of both "the" and "said" is redundant and either "the" or "said" should be deleted.

Use Claims

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 53-55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 53-55 provide for the use of an emulsified fuel, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Additionally, 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Thus, claims 53-55 are also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

In order to overcome this rejection, it is advised that the applicant change the "use of" language in claims 53-55 to "process of using".

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 31, 32, 38-46, 42, and 44-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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(i) More particularly, claims 38-40, 42, and 44-46 appear to improperly recite a Markush group. Consequently, it is impossible to determine which elements of the group are required by said claims. When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, then "wherein R is A, B, C or D" shall also be considered proper (emphasis added). See MPEP § 2173.05(h).

(ii) Claims 41, 43-46, and 49 recite "it" or "its" in the first line of each presently cited claim, wherein it is not clear which specific element or elements the applicant is referring to, thereby rendering each of cited claims indefinite.

(iii) Claims 31, 32, 39, 42, and 47-50 recite the broad recitation of, for example, in claim 50, "5 to 35% by weight", and the claim also recites multiple narrower statements of the range limitation "preferably 8 to 20% by weight". It is to be noted that a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation in the same claim is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Claims 51 and 52 are rejected under 35 U.S.C. 112, second paragraph, as being dependent from a rejection base claim, namely claim 50.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 29-35, 39-42, 48, and 50-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1152049 to Intevap in view of Hayes et al. (U.S. Patent Number

4,666,457) and Shirodkar et al. (U.S. Patent Number 6,027,634), wherein Intevap and Hayes were both cited on applicant's PTO-1449 filed on January 26, 2005.

Intevap discloses an emulsion useful as a low emission fuel for compression ignition engines and a method for making the same (Paragraph [0001]). The emulsion includes a water phase, a hydrocarbon phase that is intrinsically liquid, and a surfactant, wherein said water phase is present in an amount greater than or equal to about 5% vol. with respect to the volume of said emulsion, and said water phase and said surfactant are present in a ratio by volume of said water phase to said surfactant of at least about 1 (Paragraph [0014]). Moreover, the final emulsion contains a water content of at least about 5% vol. and preferably between 5% vol. and about 15% vol. with respect to the total volume of the final emulsion product, and wherein the surfactant is present in an amount of less than or equal to 15% vol. with respect to the emulsion (Paragraph [0056]). It is to be noted that although the amounts of the various components in Intevap are disclosed in vol%, the disclosed ranges are broad enough to intrinsically encompass the amounts presently claimed. Further, Intevap discloses a method for forming an emulsion including providing a water phase, providing a hydrocarbon phase, providing a surfactant, mixing the water phase, hydrocarbon phase, and the surfactant (Paragraph [0023]; see also Paragraph [0058]). Suitable hydrocarbons include petroleum hydrocarbons and natural gas derived products, examples of which include diesel fuel and other low gravity hydrocarbons such as Fischer-Tropsch synthetic diesel and paraffins C₁₀ to C₂₀ (Paragraph [0032]). Further, Intevap discloses that additional components such as cosolvents and other additives

may also be present (Paragraph [0040]). The sulfur content of the hydrocarbon is less than 0.5 wt% (Paragraph [0034] and Table 1). Intevep's surfactants include both lipophilic and hydrophilic surfactants (Paragraph [0017]).

The difference between Intevep and the presently claimed invention is the requirement that (i) the emulsion include an emulsifying agent, and (ii) at least one hydrocarbon fraction includes at least 50% by weight of normal paraffins and the emulsifying agent includes at least one nonionic organic emulsifying agent.

With respect to the difference in (i), Shirodkar, which is drawn to an oil-water emulsion including asphaltene and an emulsifying agent (Col. 1, lines 6-8), discloses an emulsifying agent includes a cationic, anionic, or nonionic surfactant, wherein emulsifying agents are alternatively referred to in the art as wetting agents, surface active agents, synthetic detergents and the like (Col. 3, lines 64-67). It would have been obvious to one of ordinary skill in the art to use Shirodkar's emulsifying agent which encompasses surfactants generally in Intevep because an emulsion can be formed (Col. 3, lines 63-67).

With respect to the difference in (ii), Hayes, which is drawn to hydrocarbon emulsions (Col. 2, lines 22-27), discloses an emulsion having viscous hydrocarbons characterized by a paraffin content of about 50% by weight (Col. 9, lines 55-63). Hayes also discloses nonionic surfactants including ethoxylated carboxylic esters including ethoxylated natural fats and oils (Col. 12, lines 48-66). It is further disclosed that at least one nonionic surfactant is used (Col. 12, lines 30-45). It would have been obvious to one of ordinary skill in the art to use Hayes's hydrocarbon and surfactant package in

Intevep because the resulting composition and method would allow the emulsion to be stored or transported easily along with providing the advantage of burning directly as quality combustible fuels (Col. 7, lines 42-53), thereby obtaining the invention as set forth in the presently cited claims.

11. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Intevep in view of Hayes and Shirodkar as applied to claims 29-35, 39-42, 48, and 50-56 above, and further in view of Cosyns et al. (U.S. Patent Number 4,133,841).

The difference between Intevep in view of Hayes and Shirodkar and the presently cited claims is the requirement that the normal paraffins comprise synthetic paraffins obtained by oligomerizing olefins having 2 to 5 carbons or by Fischer-Tropsch synthesis starting from light hydrocarbons.

Cosyns, which is drawn to olefinic compounds obtained from Fischer-Tropsch type syntheses or other similar types of syntheses (Col. 2, lines 5-10), discloses that the light fraction containing hydrocarbons having from 3 to 6 carbons is subjected to fractionation during which, on the one hand, a fraction comprising hydrocarbons with 5 or more carbon atoms per molecule and oxygen compounds is discharged, and, on the other hand, at least one other fraction is collected, each other fraction being fed to a polymerization zone, the effluent from the polymerization zone being then fed to a fractionation zone in order to recover a fraction of high content in relatively light olefins and paraffins (Col. 2, lines 5-56). It would have been obvious to one of ordinary skill in the art to use Cosyns' paraffins in Intevep in view of Hayes and Shirodkar to obtain a fraction of high content in relatively light olefins and paraffins (Col. 2, lines 5-56)

intrinsically providing an emulsion having lighter paraffins, thereby obtaining the invention as set forth in the presently cited claims.

12. Claims 37, 38, 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Intevap in view of Hayes and Shirodkar as applied to claims 29-35, 39-42, 48, and 50-56 above, and further in view of Haupais et al. (U.S. Patent Number 6,068,670).

The difference between Intevap in view of Hayes and Shirodkar and the presently cited claims is the requirement that the hydrocarbon include a vegetable oil and that the emulsion includes an antifreeze, a soot remover, a cetane number improver, and a bactericide.

On the one hand Intevap is open to the addition of additives (Paragraph [0040]) but does not disclose any specific additives as required by the presently cited claims. On the other hand, Haupais, which is drawn to stabilized water/hydrocarbon emulsions including surfactants (Col. 1, lines 24-26), discloses that the hydrocarbon includes esterified or non-esterified vegetable oils (Col. 1, lines 5-23). It is further disclosed that the emulsion includes octane-improving additives such as alkyl nitrates which is a cetane improver (Col. 8, lines 8-18). A soot inhibitor is also disclosed including alkaline earth metal catalysts based on magnesium, calcium, barium, cerium, copper, iron, or a mixture thereof (Col. 8, lines 19-31). A biocide preferably a bactericide is also disclosed (Col. 8, lines 32-35) conferring a biocidal benefit to the emulsion. An antifreeze is also disclosed which includes glycols or salt solutions (Col. 8, lines 44-46). The additives in Haupais are added in an amount of 0.01 to 5% by weight compared to the total weight of the hydrocarbon(s), water, and the emulsifying system (Col. 8, lines 47-53), therein

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intrinsically including the weight ratio of the normal paraffins and the cetane improver as presently claimed. It would have been obvious to one of ordinary skill in the art to add Haupais' additives into the emulsion of Intevep in view of Hayes and Shirodkar because Haupais' additives provide desirable properties to the emulsion such as increasing octane number (Col. 8, lines 8-18), inhibiting soot generation (Col. 8, lines 19-31), and preventing bacterial growth (Col. 8, lines 32-35), thereby obtaining the invention as set forth in the presently cited claims.

13. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Intevep in view of Hayes and Shirodkar as applied to claims 29-35, 39-42, 48, and 50-56 above, and further in view of Coleman et al. (U.S. Patent Number 6,607,566).

The difference between Intevep in view of Hayes and Shirodkar and the presently cited claims is the requirement that the aromatics content is less than 11% and preferably less than 6%.

Coleman, which is drawn to high stability aqueous fuel compositions (Col. 1, lines 6-9), discloses a hydrocarbon content of about 43% to about 70%, wherein the hydrocarbon has a high paraffinic content and a low aromatic content of less than about 10% and preferably less than about 3% (Col. 2, lines 62-67 and Col. 3, lines 1-9). It would have been obvious to one of ordinary skill in the art to use Coleman's high paraffinic content and low aromatic content hydrocarbon in the emulsion of Intevep in view of Hayes and Shirodkar because the kilowattage per gallon provided by combusting the fuel composition is sufficiently high so that the engine need not be

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derated (Col. 2, lines 62-67 and Col. 3, lines 1-9), thereby obtaining the invention as set forth in the presently cited claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shruti S. Costales whose telephone number is (571) 272-8389. The examiner can normally be reached on Monday - Friday, 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

SSC
Shruti S. Costales
October 14, 2005

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